

CLAIMS

1. A removable loading tool for use with a catheter assembly, the loading tool comprising:
- a body, the body defining a substantially hollow chamber, the
- 5 substantially hollow chamber having a first portion and a second portion, the first portion having a first diameter sized to contain at least a portion of the catheter assembly having a stent mounted thereon, the second portion having a second diameter less than that of the first diameter, the body constructed and arranged to protect the at least a portion of the catheter assembly and the stent from undesired contact or damage during loading of a
- 10 guide wire into the catheter assembly.
2. The loading tool of claim 1 wherein the first portion of the substantially hollow chamber defines a first opening and the second portion of the substantially hollow chamber comprises a second opening, the first opening having a diameter sufficient to
- 15 allow passage of the catheter assembly having the stent mounted thereon, the second opening having a diameter smaller than the first opening, the diameter of the second opening being sufficient to allow passage of a proximal shaft of the catheter assembly.
3. The loading tool of claim 1 further comprising a neck portion the neck portion
- 20 connecting the first portion of the substantially hollow chamber to the second portion of the substantially hollow chamber.
4. The loading tool of claim 3 wherein the neck portion defines a neck portion diameter, the neck portion diameter tapering from the first diameter to the second
- 25 diameter.
5. The loading tool of claim 3 wherein the neck portion is constructed and arranged to engage the at least a portion of a catheter assembly having a stent mounted thereon, thereby preventing the at least a portion of a catheter assembly having a stent mounted
- 30 thereon from migrating from the first portion of the hollow chamber to the second portion of the hollow chamber.

6. The loading tool of claim 1 wherein the body is constructed from at least one material of the group consisting of: metal, polymer and any combination thereof.

7. The loading tool of claim 1 further comprising an inside surface, the inside
5 surface being immediately adjacent to the body and defining at least the first portion of the substantially hollow chamber, the inside surface comprising a polymer material, the polymer material constructed and arranged to protect the stent from damage during manipulation of the catheter assembly.

10 8. The loading tool of claim 7 wherein the body is constructed from a different material than the inside surface.

9. The loading tool of claim 7 wherein the body is constructed from a the same material as the inside surface.

15

10. The loading tool of claim 7 wherein the stent is a drug delivery stent, the polymer material being inert relative to a drug being delivered by the drug delivery stent.

11. The loading tool of claim 7 wherein the polymer material is characterized as
20 being lubricious.

12. The loading tool of claim 1 wherein the body further comprises a gripping surface, the gripping surface comprising at least one surface feature of a portion of an external surface of the body, the gripping surface selected from at least one surface
25 feature of the group consisting of, a textured surface, a surface coating and any combination thereof.

13. The loading tool of claim 1 wherein the body further comprises a first half and a second half, the first half and the second half being separable from one another.

30

14. The loading tool of claim 13 wherein the first half and the second half are

separable along a common seam, the first half being hingedly connected to the second half along at least a portion of one side of the common seam, the first half and the second half being constructed and arranged to hingedly move between an open position and a closed position.

5

15. The loading tool of claim 13 wherein the first half and the second half define the substantially hollow chamber in the closed position.

16. The loading tool of claim 13 wherein in the open position the first half and the
10 second half are engaged along only one side of the common seam.

17. The loading tool of claim 13 further comprising at least one fastening device, the at least one fastening device, the at least one fastening device removably engaging the first half to the second half in the closed position.

15

18. The loading tool of claim 16 wherein the at least one fastening device is selected from at least one member of the group consisting of: at least one fastener, at least one screw, at least one tab, at least one clip and any combination thereof.

20 19. The loading tool of claim 1 wherein the first diameter is about 0.5 mm to about 5 mm.

20. The loading tool of claim 1 wherein the first diameter is about 0.7 mm to about 3.8 mm.

25

21. The loading tool of claim 1 wherein the second diameter is about 0.2 mm to about 4.9 mm.

22. The loading tool of claim 1 wherein the second diameter is about 0.4 mm to about
30 4.5 mm.

23. A catheter assembly comprising:

a catheter, the catheter having a catheter body defining a guide wire lumen, a proximal region and a distal region;

a stent, the stent being disposed about at least a portion of the distal region of the catheter body, at least a portion of the stent having a coating,

a removable guide wire loading tool, the tool being disposed about the at least a portion of the distal region of the catheter and at least a portion of the proximal region of the catheter, the tool having a tool body, the tool body defining a substantially hollow chamber.

10

24. The catheter of claim 23 wherein the substantially hollow chamber comprises a first portion and a second portion, the first portion removably containing the at least a portion of the distal region of the catheter, the second portion removably containing the at least a portion of the proximal region of the catheter.

15

25. The catheter of claim 24 wherein the tool body is constructed and arranged to protect the stent positioned on the at least a portion of the distal region of the catheter from undesired contact or damage during loading of a guide wire into the guide wire lumen.

20

26. The catheter of claim 24 wherein the tool body is constructed and arranged to protect the coating from undesired contact or damage during loading of a guide wire into the guide wire lumen.

25 27. The catheter of claim 23 wherein the coating is selected from at least one member of the group consisting of: drugs, genetic material, cells, a non-genetic therapeutic agent, a polymer matrix having a therapeutic component, and any combination thereof.

28. The catheter of claim 23 wherein the substance is selected from at least one member of the group consisting of: SIBS (styrene isobutylene styrene); polycarboxylic acid; cellulosic polymer, such as cellulose acetate and cellulose nitrate; gelatin,

30

- polyvinylpyrrolidone; cross-linked polyvinylpyrrolidone; polyanhydride such as maleic anhydride polymer; polyamide; polyvinyl alcohol; copolymers of vinyl monomers such as EVA; polyvinyl ether; polyvinyl aromatic; polyethylene oxide; glycosaminoglycan; polysaccharide; polyesters such as polyethylene terephthalate; polyacrylamide; polyether;
- 5 polyether sulfone; polycarbonate; polyalkylenes including polypropylene, polyethylene and high molecular weight polyethylene; halogenated polyalkylenes such as polytetrafluoroethylene; polyurethane; polyorthoester; protein; polypeptide; silicone; siloxane polymer; polylactic acid; polyglycolic acid; polycaprolactone; polyhydroxybutyrate valerate and blends and copolymers thereof; polyurethane
- 10 dispersions; fibrin; collagen and derivatives thereof; polysaccharides such as celluloses, starches, dextrans, alginates and derivatives; hyaluronic acid; squalene emulsion; polyacrylic acid and any combinations thereof.

15